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PROCEEDINGS

OF

THE ROYAL GEOGRAPHICAL SOCIETY OF LONDON.

SESSION 1860–61.

Sixth Meeting, Monday, February 11*th*, 1861.

LORD ASHBURTON, PRESIDENT, in the Chair.

PRESENTATIONS.—*Rev. C. J. Fynes-Clinton and James Campbell, Esq., were presented upon their Election.*

ELECTIONS.— *Vice-Chancellor Sir John Stuart; and G. Cox Bompas; Charles Bonney; Thomas Combe; John Jermyn Cowell; Passmore Edwards; William Fairbairn; John Fleming; William Forsyth; William Bosville James; Hayes Kyd; William Robertson Sandbach; Peter Sharp, and James Simpson, Esqrs., were elected Fellows.*

ANNOUNCEMENT.—The subscription list in aid of Consul Petherick's expedition up the White Nile, amounting already to upwards of 1000*l.*, was laid upon the table.

ACCESSIONS.—Among the accessions to the Library and Map-Rooms since the former meeting were Sir John Richardson's Polar Regions; Bombay Magnetical and Meteorological Observations; Mercantile Navy List for 1861; Du Chaillu's Western Equatorial Africa; Sketch of Country explored by Mr. J. M. Stuart; the Royal Illustrated Atlas, Parts 21 and 22; Keith Johnston's Royal Atlas, Part 8, &c.

1. *Discussion on the North Atlantic Telegraph Papers.*

[Adjourned from the last Meeting.]

The PRESIDENT said he need not read over again to the Society the names of the very interesting Papers that were submitted to them on the last occasion of their meeting. There were now amongst them travellers who had gained experience in every quarter of the globe;—many learned geographers, who had been themselves present in those portions of the earth which had been alluded to in those Papers: and he trusted that they might have their assistance in correcting what they may have seen to be wrong; in amplifying and illustrating what they had heard. The subjects which come before the Society, within its province, are the geographical features; they were not engineers, nor electricians, to judge of the power of electric currents to pass from this or that part of the earth; they were not members of Parliament, who were to determine what aid, what facilities by law were to be afforded to men who had devoted themselves to this great enterprise; nor were they capable of judging of the respective merits of the many plans which had been put forward before the public. All that they could judge of were the geographical facts which had been laid before them, and of those facts there could not be better judges than the assembly that he saw before him. It was, therefore, with hopes of receiving instruction and much knowledge, that he called upon those gentlemen, more particularly, who had been in these scenes, to give them the advantage of their experience, in either amplifying, correcting, or illustrating, the several facts which had been brought before the Society.

SIR EDWARD BELCHER took a very deep interest in the deputation to Lord Palmerston to get the expedition sent out for this northern telegraph; and he was very happy indeed to find that nearly all the arguments that were then used have been so thoroughly realised. He thought, in the first instance, as has been proved, that they should find a great connecting bank between Scotland and the Færöes, and between Iceland and Greenland. As to the difficulties which were raised with reference to the Labrador shore, he was very glad to find that the reefs, which it was said would entirely prevent any cable being laid across there, have vanished with the ice; they have gone southerly somewhere or other, and have not yet been found; at least those reefs that are there, are rather helps than otherwise by preventing the ice coming down upon the entrance. He should have liked very much to have been present at the last meeting to have understood the nature of the soundings;—and while speaking of the soundings, he was sorry to say that before another institution—the Civil Engineers—it had been assumed that surveyors like himself knew nothing at all about soundings—that they did not know their business, and that really some civilians would have to teach them their work. Now, as far as he was himself concerned, during the whole of his servitude he adopted a particular means for getting up the bottom in large quantities, and in such large quantities that he thought nothing of bringing up a hatful at a time. He had six cases of microscopic shells, a very handsome collection, all of which he had got up by that means. The very simple mode that he adopted to sink his lead and to get up the soundings from the bottom was this:—The sounding lead was encased by a cylinder, and the lead being conical, the cylinder on striking the ground flew up, then the lower part of the lead stuck to the bottom, picked up its quantity of soundings, and, as the lead was withdrawn, the cylinder slipped down and completely protected whatever adhered to the lead from being washed away. The other instrument which he used for obtaining shells was a small dredge attached to the lead, and as the lead struck the bottom, the flanges scraped up a quantity of earth.

MR. PLINY MILES mentioned one or two facts that he had noticed while travelling in Iceland a few years since in regard to its climate, whence it may be concluded that that country is not so cold as it might be imagined from its name and locality. The small hardy race of horses there subsist entirely out of doors in the winter, without any kind of food, in the shape of hay, being given to any of them, excepting only to those which they use for domestic purposes, during those months. The rest are without any kind of food, except what they gather from the open country. He saw in one case a mahogany tree on the shore, not far from Portland, on the south coast of Iceland, that had unquestionably floated with the Gulf Stream from the Gulf of Mexico itself. He was told also by Professor Johnson, that it was not unfrequently the case that spruce or other logs from Norway were found driven on to the northern coast, at the same time that logs of wood floated thither from the southern portion of the North American continent. They are there found together; the one current having come from Spitzbergen, and the other from the Gulf Stream. Standing on any mountain or height in Iceland, one sees a green and beautiful landscape; in fact, the natives say, "Iceland is the finest country the sun shines upon," though at some seasons of the year they have very little of the sun to shine. With regard to the absence or presence of trees in Iceland, that has nothing to do with the coldness or the severity of the climate. It is well known that there are trees of large size on the coast of Norway, where the climate is far colder than in the most severe seasons that have ever been known in Iceland, or in regions still farther north. It is a fact, that on some portions of the coast of Scotland, and in all parts of the Orkney and Shetland and Færöe Islands, not a single tree 6 feet high will be seen, while they are found in Iceland 18 feet high. He would not attempt to explain why trees are found growing in one very severe climate, and not in others, but it is undoubtedly owing, to a certain extent, to the direction of the wind, and to the sea air. At any rate no trees whatever are found on some of our more southern coasts, while farther north, on the Labrador coast, there are large trees, spruce, pine, larch, and others. So that the fact that there are no trees in Iceland, must not lead persons to suppose that the cold is necessarily extremely severe. He would refer to a statement made by a gentleman who read a Paper at the last meeting of the Society, with regard to the thickness of ice at Reikiavik. He had a distinct recollection that the lake spoken of is seldom known to be frozen to the depth of 18 inches. He had been told that sometimes it was not frozen more than 2 inches during the whole course of the winter, showing most conclusively the mildness of the climate.

CAPTAIN SHERARD OSBORN, R.N., would not attempt to say anything as to the practicability of the route, inasmuch as the distinguished travellers and navigators, who read their Papers at the last meeting, have given us sufficient authority to say that there were obstacles on the route undoubtedly, but that all those obstacles are surmountable. Touching the soundings, he would call the attention of the meeting to the agreeable fact that the entire line of soundings show that there is no depth greater than 1000 fathoms between Scotland and longitude 30° w. on the proposed route, or exactly halfway across the Atlantic Ocean. There are then two valleys of deep water, of small width, on either side of Greenland. The soundings diminish very abruptly as Greenland is approached, and shallow water will be found probably round Cape Farewell. With regard to the Labrador coast, the principal difficulty was in carrying the cable within the 150 fathoms of water, so that it might not be exposed to the action of the icebergs. He was sure that Arctic men all agree that 150 fathoms would be about the maximum draught of any iceberg, so that the chief object to be secured in placing the cable is to push the 150 fathom-mark as near into the coast as possible. They would remember that Sir Leopold M'Clintock had said that he would like to have a more accurate survey of the Labrador coast, so as to carry the deep water a little closer. If they looked at the map they would see 1190 fathoms carried just to the north of Hamilton Inlet, and there was every reason to believe that the bank of Newfoundland—they might call it so, although it extended a long way up the Labrador coast—deepened suddenly there. As far as one might speculate upon the question, he had no doubt that a more accurate survey would lead to the obtaining of such information as would give a channel leading close into the Labrador shore, near Cape Harrison. He would propose, that the cable there should open out and form, say, half-a-dozen strands running into the shore at certain distances from each other, so that if a berg drifted down and happened to pick up one, it would not pick up all the rest, and by that means the cable in the deep water would be at all times safe and recoverable by following out those strands. There was one feature that struck him particularly, and on which he wrote to Captain M'Clintock. No man would dispute that bergs of ice sounding the bottom would rip it up, just as a plough would a ploughed field; and that if that bank was thus ripped up by the floes of ice, there would be hardly any animal or vegetable life upon it; it would be a kind of subterranean desert. Sir Leopold M'Clintock was continually dredging there, and in a note just received, that distinguished navigator said, " The bank of Hamilton Inlet has from 100 to 200 fathoms upon it. I am of opinion that icebergs which ever drift down there cannot possibly reach the bottom. They ground near the islands at the entrance and are not bergs of the largest size. Shells and other small things were brought up by the sounding machines in 40 or 50 fathoms, *as in other parts of the sea* where icebergs cannot possibly interfere with them." Near Fredrickshaab Captain Sir L. M'Clintock says they dredged up in 26 fathoms, delicate corals and creatures which could not live at the bottom of the sea if much disturbed by icebergs,—and adds "*so much for the destructive propensities of icebergs.*" How all this came about was a question he (Captain Osborn) did not pretend to solve, but the fact was very curious, as showing that bergs could touch the bottom without sweeping everything before them. He was sure that every geographer would be interested in the following fact, for it related to the late Sir John Ross, who stated that in his voyage in 1818 he brought up mud from 1050 fathoms, the deepest soundings ever obtained at that time; and in the mud were shells and fish. So to that old navigator they first owed that the fact of animal life in great depths had been discovered. There were remarks at the last meeting about difficulties with regard to the intense cold and the aurora borealis affecting the telegraph. It might be interesting for the Society to know that a few seasons ago, Captain Kellett and Captain M'Clintock were beset in the ice in 74½° N., and they communicated with each other by telegraph from ship to ship. Now 74½° N. latitude was a long way in the Arctic zone, and the cable, the practicability of which they were at present discussing, would lie a long way without it. That telegraph was at work throughout the whole winter, and was not in any way affected by that terrible bug-bear the aurora borealis, nor by the intense cold experienced so far north.

MR. JOHN BALL said it was impossible to over-rate the importance of the subject brought to the attention of the Society by the gentlemen who had read their Papers. It was very desirable not to under-rate the difficulties which still remained, and which he thought had not all of them been sufficiently brought forward, for it was by pointing out the difficulties at this early stage that they would soonest arrive at the solution of those difficulties and the great end which, he trusted, they would live to see accomplished. He had long felt that this northern route was the right one; but he was not blind to the many difficulties which still remained in the way. With reference to the precise points which came particularly under the attention of this Society, and were brought clearly before them at the last meeting, there were two or three on which he wished to make a few observations. As to the Færöes, he apprehended there was no great difficulty. As to Iceland, it was proposed to land the cable at the south-east side of the island, to carry it across the island, and start again from Reikiavik in order to communicate from thence to Greenland. Now there, are they not unnecessarily encountering very serious difficulties and incurring a great increase of expenditure? It is true that it is possible to cross Iceland—perfectly possible—but so experienced a traveller as Dr. Rae found that it was not practicable without very great sacrifice of time, and encountering great difficulties, to take that direct route; but had he at all considered what were the difficulties and cost of laying down a telegraphic wire? He thought Dr. Rae had mentioned—every traveller in Iceland has mentioned—that large district in the interior of the island over which travellers must hurry as fast as their horses can carry them, for the simple reason that there is nothing upon which to live; and if they were to lay down a telegraph across that interior desert of Iceland, they must be prepared for a vast number of difficulties and an enormous amount of money, and time, and labour. But, furthermore, how is it to be done? If they required piles, they must carry every pile into the island, across the island by horses; and supposing they could hire every one of the horses in Iceland, there are not enough to enable them, in one or two seasons, to accomplish the work. And then, again, as to the difficulty with respect to the breakers. Would it not be better to confine the difficulties to one point alone —the entrance into the Faxe Fiord? He did not know whether it was proposed to land the cable at that point or not, but let the difficulties be confined to one point instead of two. With reference to Labrador, even though it be true that they could carry the 150 fathoms depth near to the coast, still that might be as formidable as 10, or 20, or 50 miles in another place. If it be a part of the coast on which there are icebergs, it is necessary, as it appears to him, not only to carry the 150 fathoms of water close in shore, but also to get it safe behind some headland which will throw aside the icebergs. Might it not be possible that by making the line a little longer, and running it into the strait of Belle Isle, the true solution would be found?

SIR RODERICK MURCHISON would not have occupied the time of the Society for one moment, upon a subject of which he knew so little, if any Arctic geographer or voyager had been prepared to rise. He would only say he was one of the very many well-wishers to every expedition of this sort which the Royal Geographical Society holds within its number. They were not there, as the President very properly said, to discuss the engineering merits of the project, nor were we really capable of estimating the difficulties that had been apprehended by his friend Mr. Ball; but they were capable of estimating, in a very decisive manner, the facts that Sir Leopold M'Clintock and Captain Sherard Osborn, who are men of great experience as Arctic voyagers, have pronounced in favour of this scheme. He made no observations upon the scheme, except to say that had he spoken at their last meeting when the President adjourned the discussion to this evening, he should have felt it necessary to say, that they owed a deep debt of obligation to those five gentlemen who brought before us on that occasion their well elaborated Papers. They produced a mass of geographical knowledge which might never have been gained, had not this expedition been matured—he said it to his honour—through the patronage of Lord Palmerston, and carried out through the active enterprise of the gentlemen who undertook this service. Being in favour of all such expeditions, the moment his distinguished friend Captain Allen Young offered to go out in command of the little *Fox*, in which endeavour he took a deep interest, he went down to Southampton, to attend a great meeting assembled by the Mayor of that town in honour of this expedition. There Colonel Shaffner and Mr. Croskey, of the United States, and the other gentlemen associated with them, as well as the Danish officers present received from them as Englishmen, every encouragement they could offer to promote this enterprise. The details of the two expeditions have been so admirably laid before the Society that he, for one, should have been contented with the results, if he were in any way embarked as a speculator in the success of the undertaking. But not having any pecuniary interest in it, or in any rival speculation, he might say to the gentlemen of the North Atlantic Company, they had put their case so well before the public that no gentleman associated with other lines could say that they had not treated the subject in a most ingenuous and fair manner.

He could not sit down without saying that it gave him very great satisfaction to hear Dr. Rae expatiate upon the warm and hearty reception he received from the inhabitants of the Danish settlement of the Færöe Islands and of Iceland. He said this in the presence of the Danish minister; and he was sure Dr. Rae was justified when he spoke in the name of Englishmen, of their gratitude to the King of Denmark, and his Government, for having so warmly assisted them in one of those enterprises, which may lead them to connect America most directly with their own country.

DR. RAE said the time allowed him at the last meeting of this Society was necessarily so short, that he left unmentioned some important points connected with his journey over Iceland; so he now begged to say a few words in reply to the observations of Mr. Ball. The interior of Iceland over which they travelled was not devoid of grass, there being sufficient for their horses throughout the whole route, which offered comparatively few difficulties. Although two of the party were heavy men, they crossed the island in 13 or 14 days, riding the same horses at the rate of more than 30 miles per day. These ponies can carry a load of 200 lbs. or upwards, and pieces of wood 10 or 15 feet long can be carried by them over the highest and steepest ground on the route. The best line for the telegraph lies to the south of that they travelled over, and is marked on the chart by a dotted line. Along this route there is abundance of water, and grass also, except at one station, to supply which a depôt of hay could be made. This portion of the way (about the centre of Iceland), called the Springisandr Road, is almost a flat table-land. Again, some of the larger rivers that flow northward appear to be navigable for boats similar to those used in Hudson's Bay, which carry from three to four tons weight. By this means materials could be deposited at several stations near to the proposed line. He did not profess to be a surveyor, but having travelled a good deal both in the United States and Canada, he had seen telegraphs carried over more difficult and rougher country than they encountered in crossing Iceland. But should objections be offered to carrying the telegraph completely across the island, he was of opinion, from information obtained, that Portland, in the south of Iceland, although no safe harbour for ships, would form a good landing-place for a cable. From Portland to Reikiavik the distance is not over 90 miles, and the road offers no obstacles. The object of their journey was not to make a minute or detailed survey, but to determine if it were practicable to carry a telegraph over the island.

The second Paper read was—

2. *Further Details relative to the Discoveries in Central Australia.*

By Mr. J. Macdouall Stuart.

Communicated by Sir R. I. Murchison.

The expedition of Mr. Stuart, to which the present journals refer, took place in the year 1859, and was introductory to the great journey which he made through the middle of Australia. Mr. Stuart's object was a thorough examination of the country including and adjacent to that remarkable district of springs which lies between the 28th and 29th parallels of s. latitude and the 136th and 137th w. meridians. Many of these were first discovered in the present expedition, and the entire list includes the springs of Hope, Strangways, Fanny, Freeling, and Primrose.

The waters from nearly all of them run in the rainy season into the Neales, which supplies a large saline lake that extends between the above-mentioned parallels and apparently still further to the north. It represents a middle section of that large horse-shoe representation of water which appears in early maps of Australia under the name of Lake Torrens, but which recent discoveries have shown to be discontinuous. The opposite side of the lake was in no case seen by Mr. Stuart; however, the low shores afforded him no point of view of a greater altitude than 30 feet.

On the road between the Strangways and the Hope, Mr. Stuart found a remarkable specimen of that peculiar type of springs which characterize much of this part of Australia. Observing a hill at